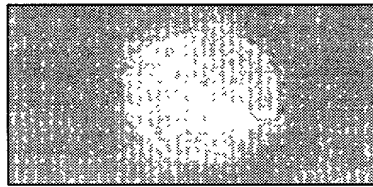


FIG. 1

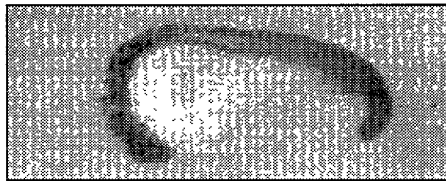
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12 HPF

FIG. 2A



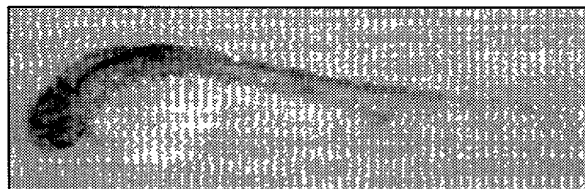
16 HPF

FIG. 2B



24 HPF

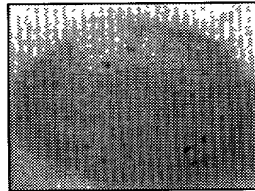
FIG. 2C



48 HPF

FIG. 2D

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H3 ANTIBODY 24 HPF

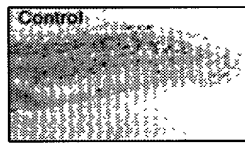
FIG. 3A



ACRIDINE ORANGE 24 HPF

FIG. 3B

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TOT 50" 20085260



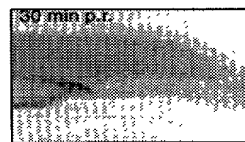
CONTROL

FIG. 4A



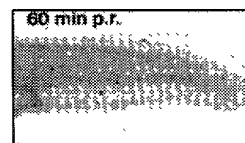
15 MIN POST-RADIATION

FIG. 4B



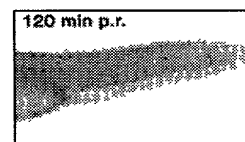
30 MIN POST-RADIATION

FIG. 4C



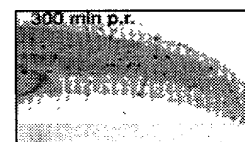
60 MIN POST-RADIATION

FIG. 4D



120 MIN POST-RADIATION

FIG. 4E



300 MIN POST-RADIATION

FIG. 4F

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FIG. 5A

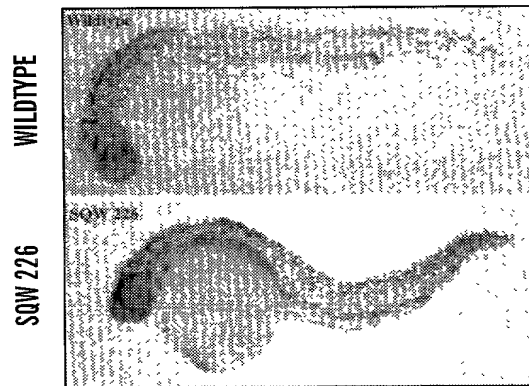


FIG. 5B

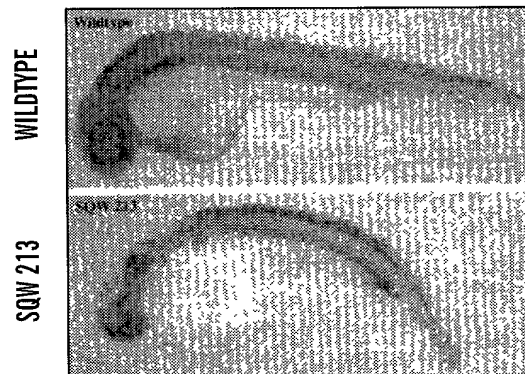


FIG. 5C

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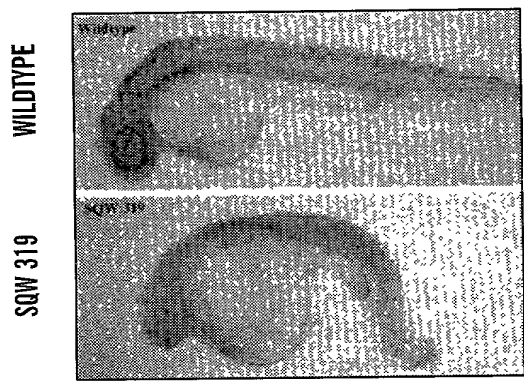


FIG. 5D

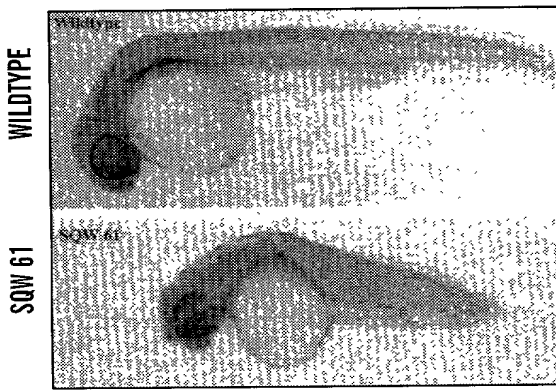


FIG. 5E

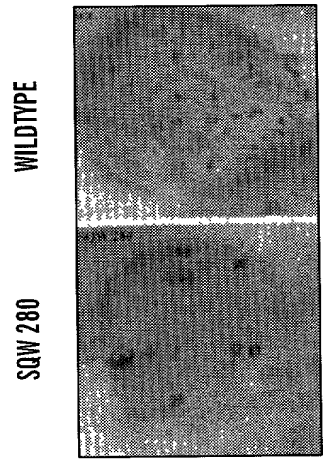


FIG. 5F

FIG. 5D

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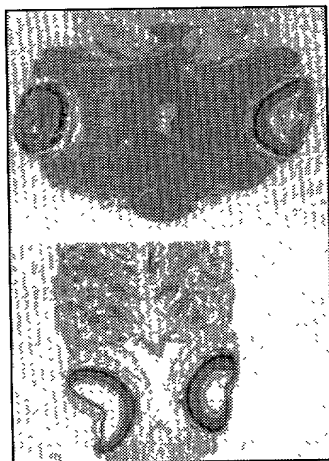
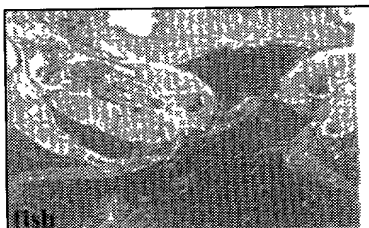


FIG. 6A

ZEBRAFISH



HUMAN



FIG. 6B

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ZEBRAFISH

HUMAN

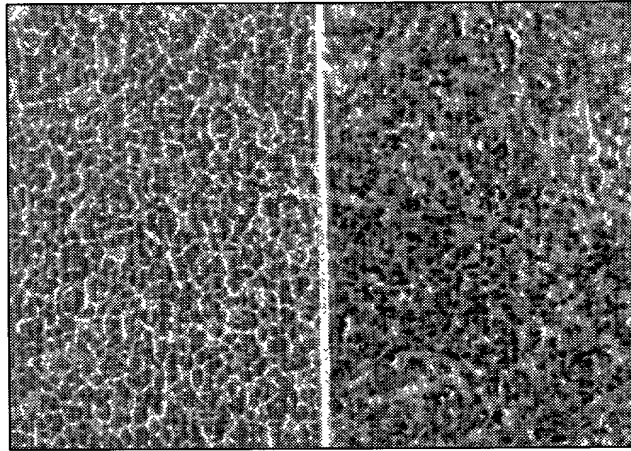


FIG. 6C



FIG. 6D

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FIG. 6E

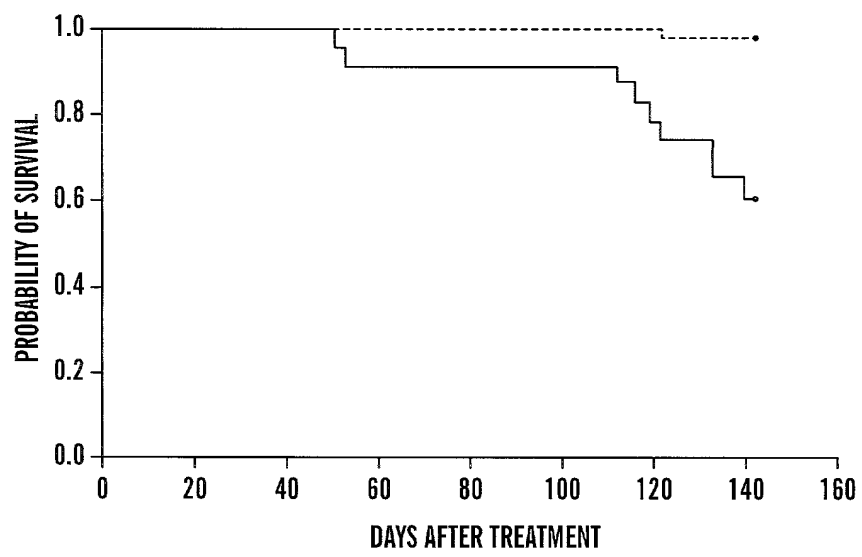


FIG. 6E

SINGLE-EMBRYO FACS ANALYSIS

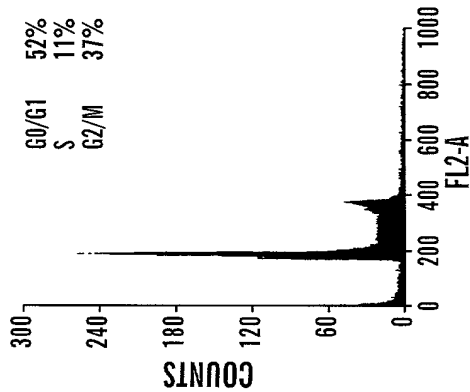


FIG. 7A

FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION

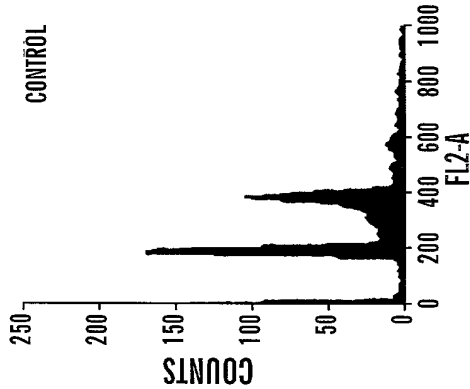


FIG. 7B

FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION

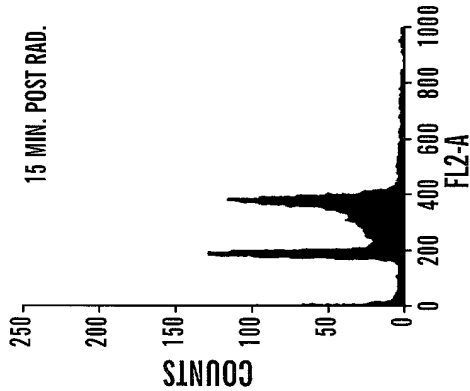


FIG. 7C

FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION

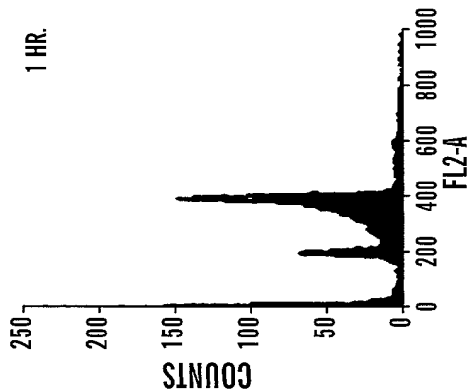


FIG. 7D

FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION

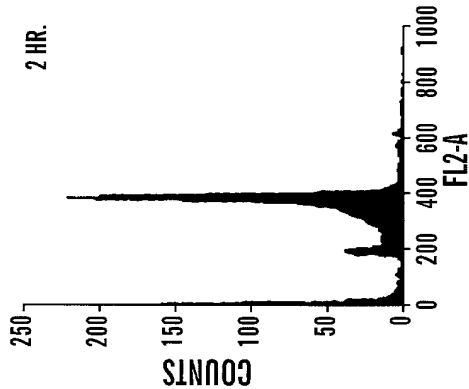


FIG. 7E

FACS ANALYSIS OF EMBRYOS
AFTER IONIZING RADIATION

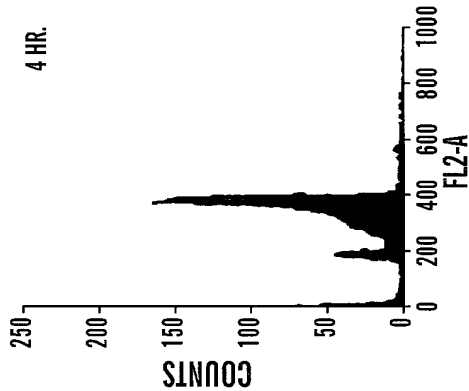
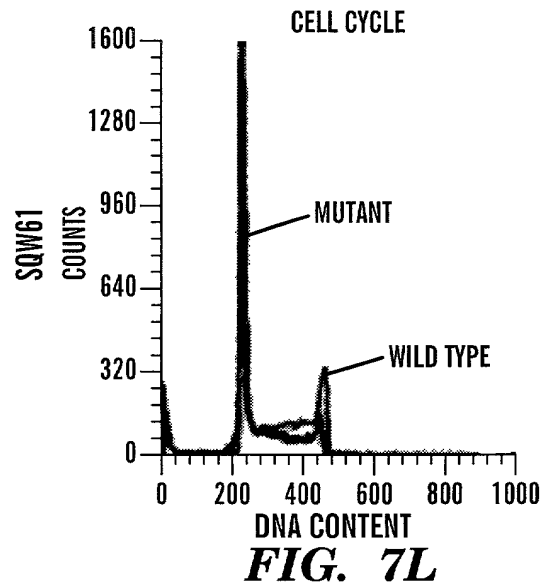
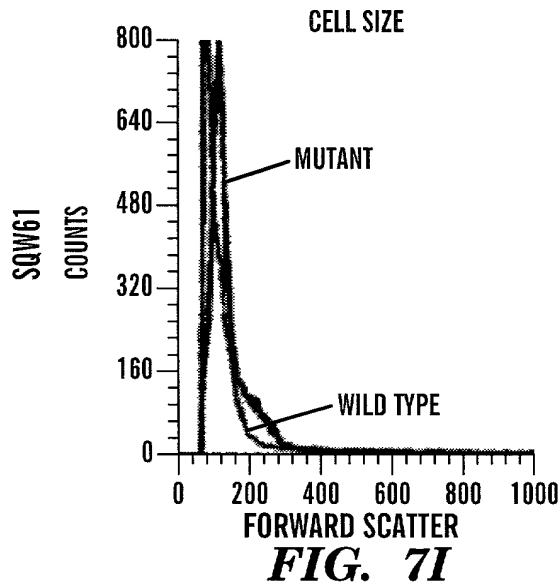
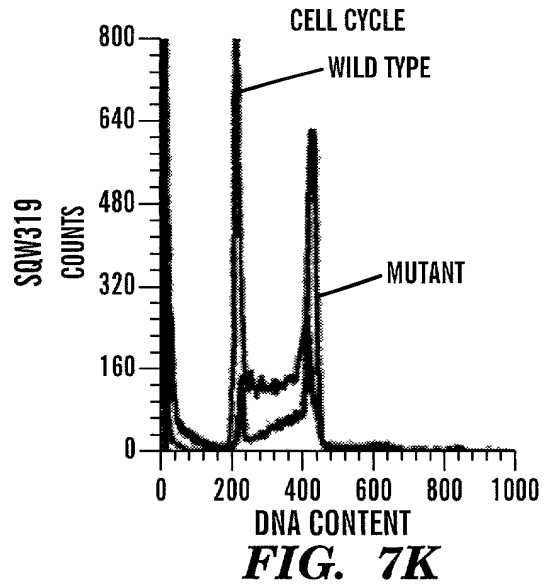
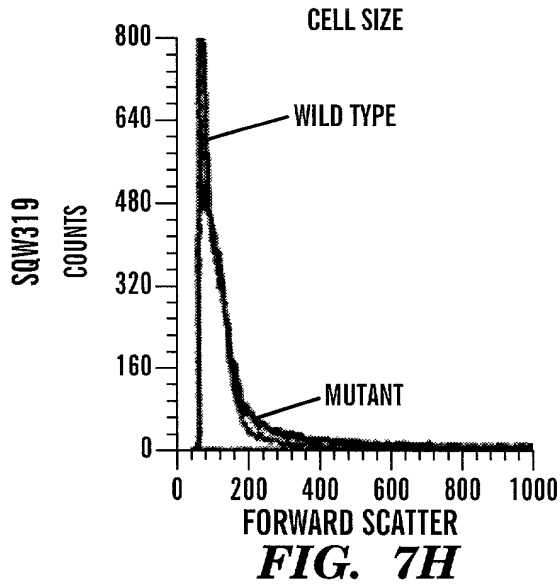
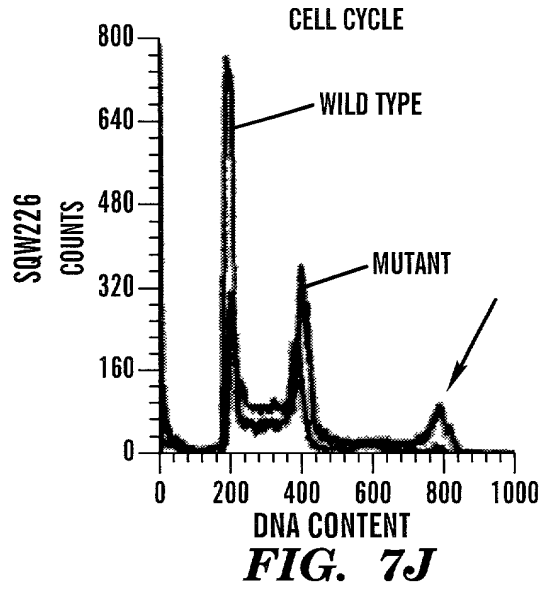
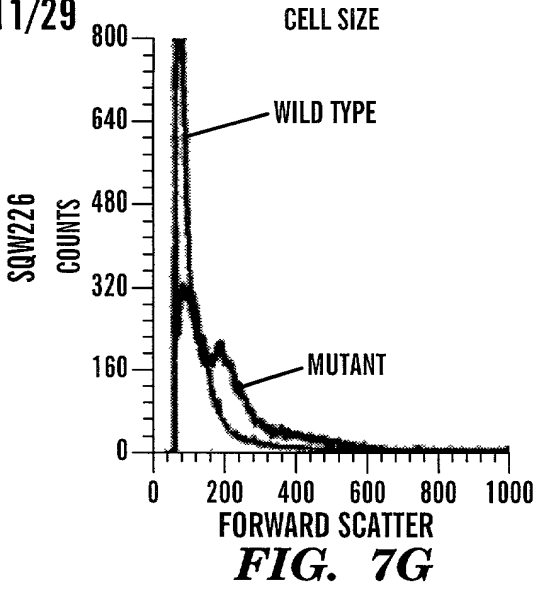


FIG. 7F

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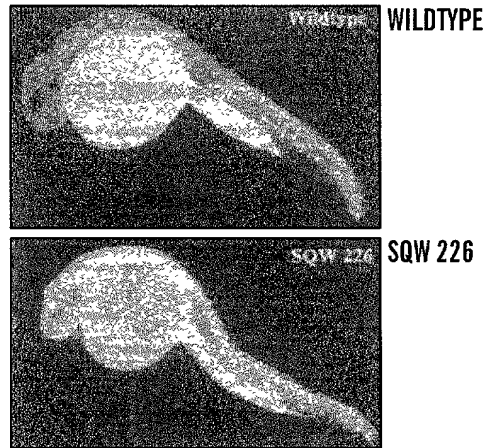


FIG. 8A

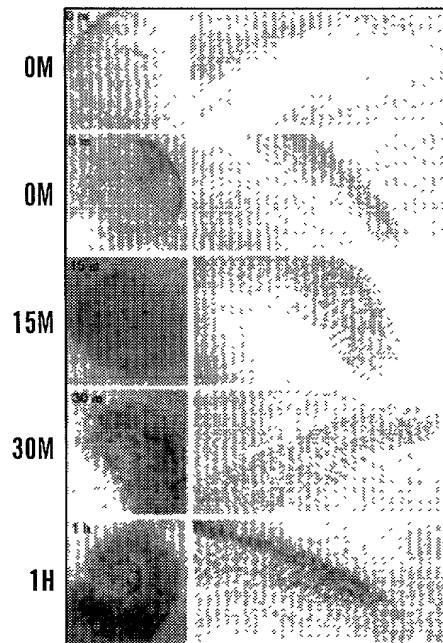


FIG. 8B

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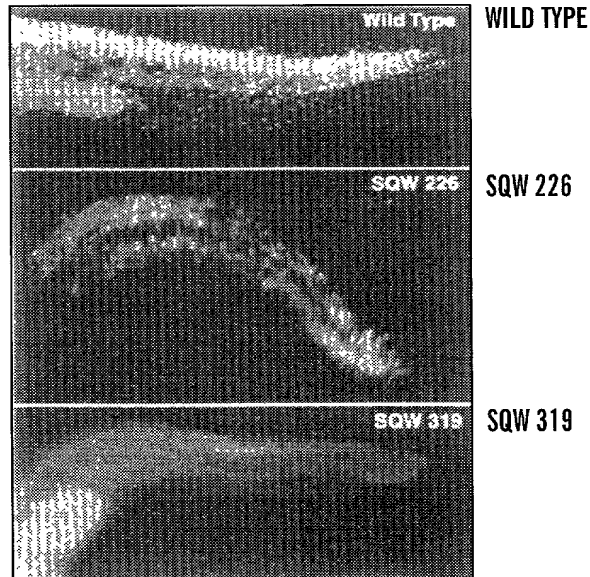


FIG. 8C

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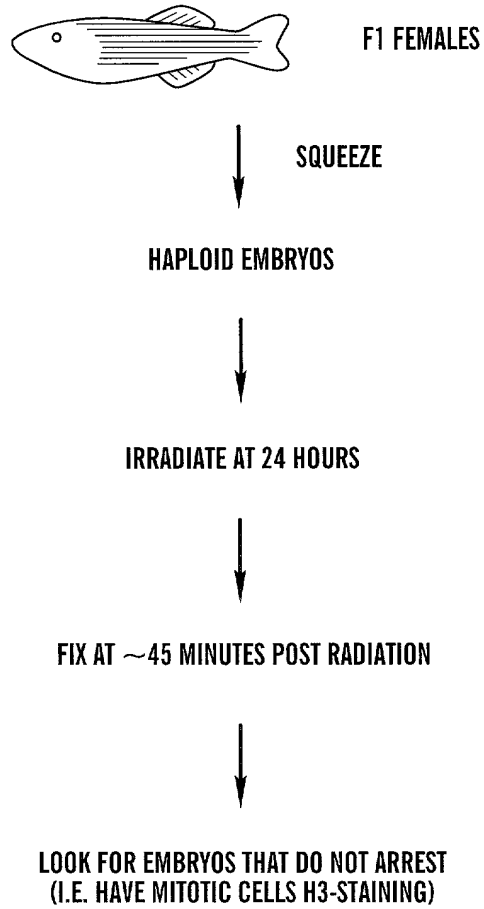


FIG. 9

WT
NON-IRRADIATED

WT
IRRADIATED

SQW 226
IRRADIATED

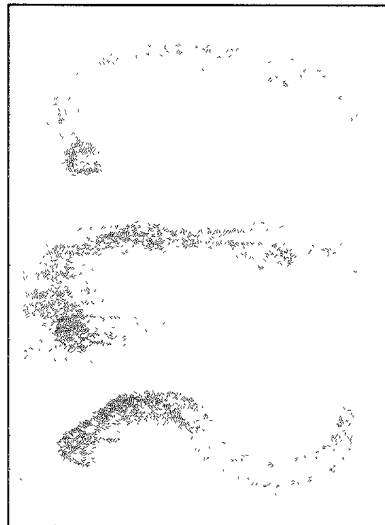


FIG. 10

Zfish MPPK--KRSSGTPOKKELKGLKSRSPDSGDN-----AVLSPERHKDKDEFFVLSEELQSTNSICDHWRIWER 68
 Frog MPPKSPRK---QQIRSQGEPRSPDRP-----DFQDQDFNFCENLKISDNVRGKAWNTYK 53
 Human MPPKTPRKTAATAAAAAAEPAPPPPPPEEDPEQDSGPEDLPLVRLEFEETEEDFTALCQKLKIPDHVRERAWLTWEK 80

Zfish EIRSMK-TNMPYSNRQMGACLFAGMELEGINLITFTQFLKAVGLSVKQFISLVRKMDVNDTISPKVNSAVTRLENKY 147
 Frog MFPSGYMRE-TAKKKESLGLCLYIASVDCCEMTFTFTELLKILRLSVNRCFRLLREMCINMDVLSNKVDNAISKKKKY 132
 Human VSSVDGVLGGYIQKKKELWGIQIFIAAVDLDEMSFTFTELCQNIETISVHKFFNLKEICT-----STKVDNAMSPLKKY 155

Zfish DVTLALYQRFVKICEKFAEPD-----KRKELWESSITMFLAKCTFLQMEDDLVISFQLLLCVLEFFAKRLSPSL 220
 Frog ENMCLLFQKFORTELLFEEQHNT---RAAVDTAPILKGTWITFLLARCKILOMDELVISSQLLLCVLDYFIKLSPPSI 209
 Human DVLFAILFSKLERTELLYLTQPS--SISTEINSALVLKVSITFLLAKCEVLQMEDDLVISFQLLLCVLDYFIKLSPPML 234

Zfish LQSPYNSVSSSTLSPPTRTSRNCGKSKPR--PAEYDMLLETLCQEGDCSVDEVKNVYQSTFCALDSVGLLGLQGLP 298
 Frog LKEPKYKALNGLPVNTPPSSRRSQNRNTRVSPQSEITDSKYLEFLGSQNYCPMDEVKNVYSTSFVDFLASAGISSNECIP 289
 Human LKEPKYTAV--IPINGSPTPRPGQNRSARIAKQLENDTRIIEVLCKEHECNIDEVKNVYFKNFIPFMSLGLVTSNGLP 312

Zfish PMEALSKQYEELIYHKSDFDARLFISDDETLSPNKIEVSKVEVTPRKNLFAEDIAIPVPOTPIRAAATSIQOLRGDLTSG 378
 Frog KVESISROYEELIYHSDLDARLFENDETLKVDVQDSLDLERTPRKD--ESEVFPVPOTPIVFGAMNTVQOLMVTLSA 367
 Human EVENLSKRYEELIYHSDLDARLFIDHDKTLQTSIDSFETQTPRKNLDEEVNVPHTPIVFTVNTIQOLMMILNSA 392

Zfish SDQPSNLLVYKNTVDPSGETKKVEEELGEVFIQRFQAQVGGHCEGLGRKRFYLGALYYKVMESMLKSEERLSDVN 458
 Frog NDKPDTLDSYFSNCTVNPKTITDRIEHFGHVFKEKFASSVGCACAEIGYQPKLVCLYYRMEAILKTEERLSVHN 447
 Human SDQPSNLLSYFNCTVNPKESTLKPVKDICYIFKEKFAKAVGCCVEIGSQRYKLVRLYYRVMESMLKSEERLSIGN 472

Zfish FSKLLNNAFHTSLACALEVVIATYVGSLSKNGGFRSSGASDSVESDLCPFWILSVFQLPAFDYKVIESFIKAEP 538
 Frog FSKLLNNDIFHICLLACAVEVWVASMARNA-----SQAYC--SSGTNLSFPWILRAFEIKAFDYKVIIECFIKAEP 518
 Human FSKLLNNDIFHMSLLACALEVVIATYSRST-----SQN--LDSGTLSPFWILNVNLKAFDYKVIIECFIKAEG 542

Zfish KHDVVKHLECEHVMESLAWRADSPFLDLKQKRE-EGPGEQAEPPATLNQPLHNNHTAADLYLSPVSPCRQ----- 610
 Frog TSNMVKYLECEHVMESLAWRADSPFLDLKQKRE-EGPGEQAEPPATLNQPLHNNHTAADLYLSPVSPCRQ----- 598
 Human TREMKHLECEHVMESLAWRADSPFLDLKQKRE-EGPGEQAEPPATLNQPLHNNHTAADLYLSPVSPCRQ----- 622

Zfish --P-PVMEAEPTP--GTRAPRSNLSLFYKKLYRMAYLRKMLFSMLTSHPEMEPIIWTLLQHTLQNEYELMRDRHLD 685
 Frog TSSVTNGQVSSSQPVQ---QKSTLSLFYKKVYLLAYKRULSSLCSSLLSDHPELEQVIWTLLQHTLQNEYELMRDRHLD 674
 Human NST-ANAETQATSAFQTQKPLKSTLSLFYKKVYRLAYLRNLTICERLLSEHPELEHIIWTLLQHTLQNEYELMRDRHLD 701

Zfish QLIMSAMYATCKVKMDLRFKTIVTAYKELPNTNQETFKRVLIREQQYDSIIVFYNLVFMOKLTNLIQYSSPPPPPLSP 765
 Frog QIMMCSMYGICKAKNIDLRFKTIIVTAYKGLTNTNQETFKHVLIRDGQYDSIIVFYNLVFMOKLKSILQYCSARHPTLSP 754
 Human QIMMCSMYGICKVKNIDLRFKTIIVTAYKOLPHAVQETFKRVLIKEEYDSIIVFYNSVFMOKLTNLIQYASTPPPTLSP 781

Zfish IPHIPCSPIK--NSPLRVPCSNMYSPLKSSRV-----SPLVMTPRSRIISIGESFGSADKFQKINQVSSSDWSLK 837
 Frog IPHIPRSPYRFGNSP-KVPG--NIYVSPKTPYKTADGLSPSKMTPKTSFLISLGETFRSPDRFQKINQLNSCERPIK 831
 Human IPHIPRSPYKFPSSPLRIPGN--IYISPLKSPYKISEGLPTPTKMTPRSRIISIGESFGTSEKFKINQVCSNDRVLK 860

Zfish RSLDGGSAKPLKRLRFDMDGDEADGSKS-SGESALIQKLAENSTSRMRCEQKLKEESDKDHPEP. SEQ ID NO: 1 904
 Frog RSADTGTTPKPLKRLRFDSDGDEADGSKHIQGESKFQKLAENSTSRMRCEQKLKEESLESSQEEK SEQ ID NO: 2 899
 Human RSAEGSNPPKPLKRLRFDIEGDEADGSKHLPGESKFQKLAENSTSRMRCEQKLMNDSMDTSNKEEK SEQ ID NO: 3 928

FIG. 11

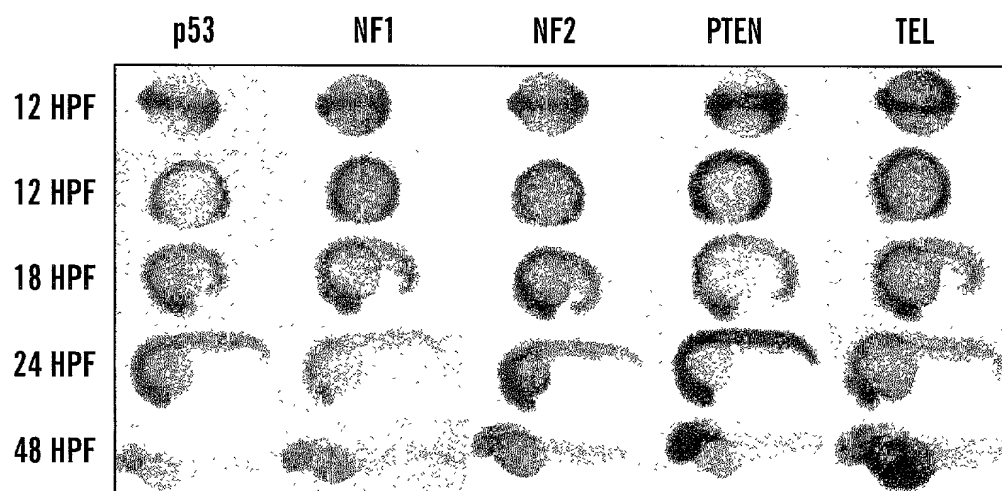


FIG. 12

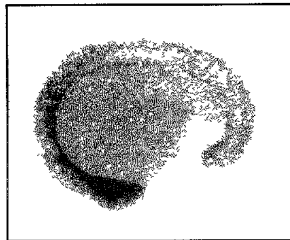


FIG. 13A

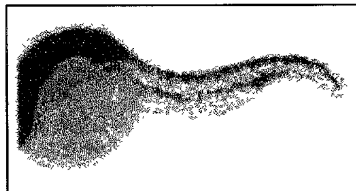


FIG. 13B

SQW 213

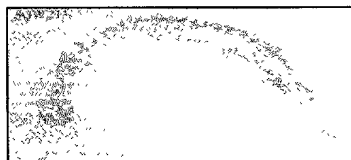


FIG. 13C

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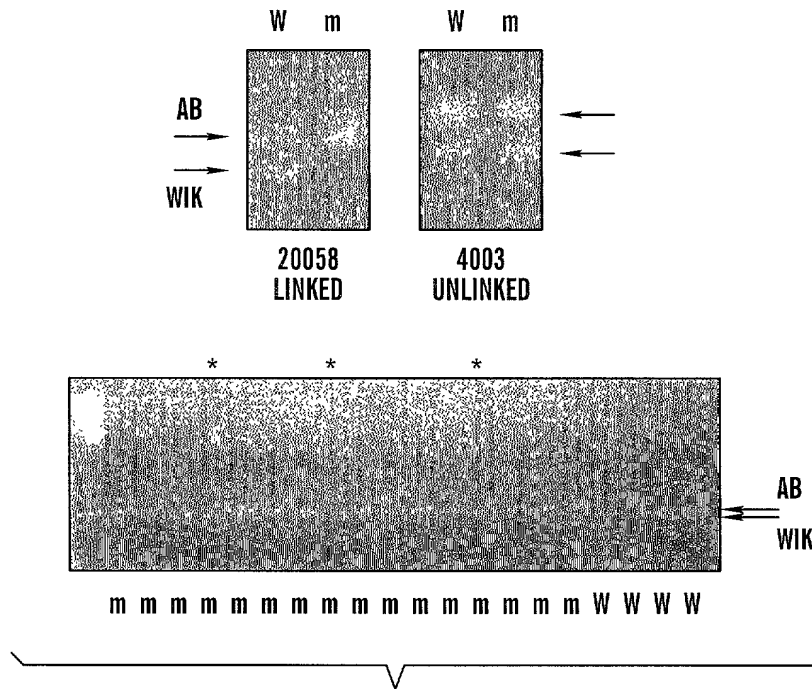


FIG. 14

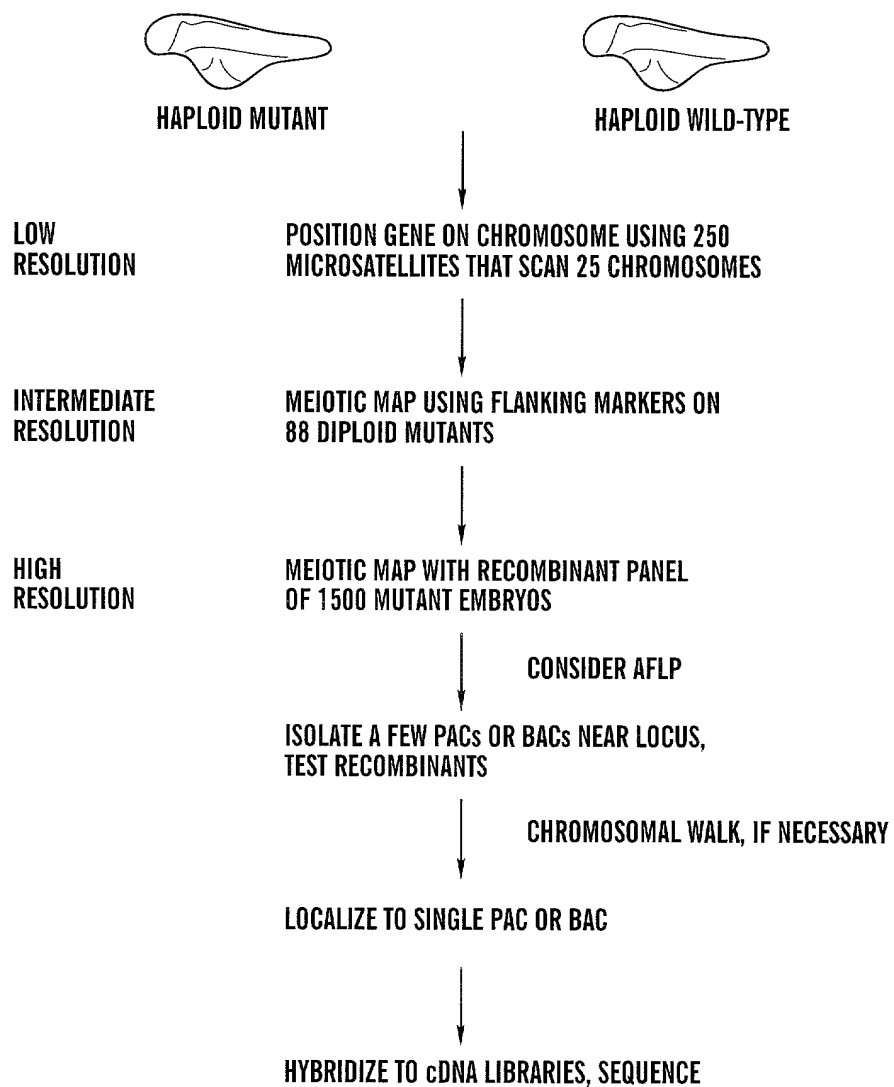


FIG. 15

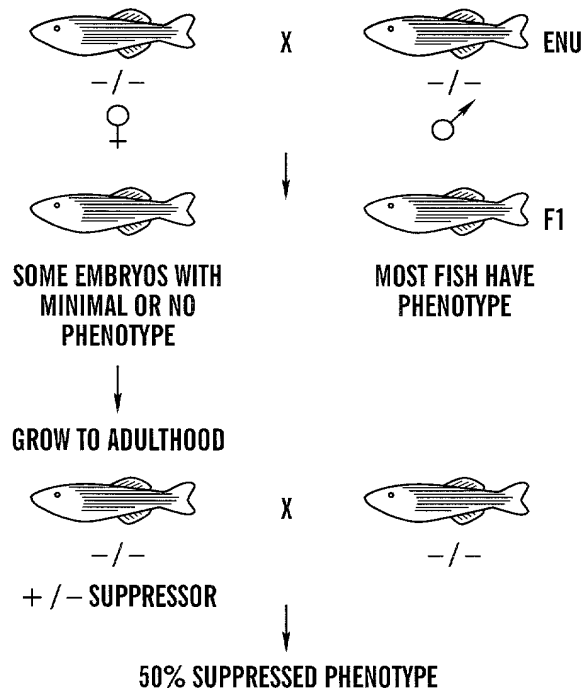


FIG. 16A

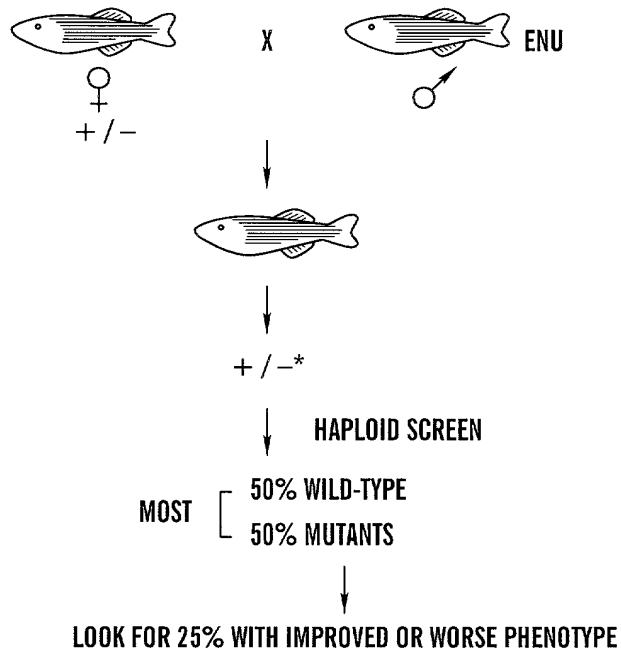


FIG. 16B

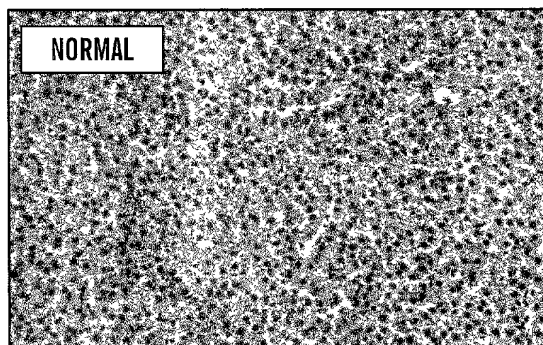


FIG. 17A

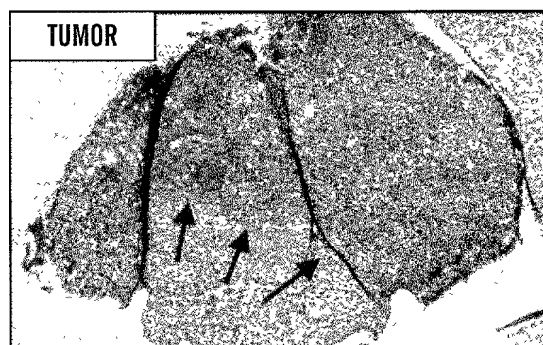


FIG. 17B

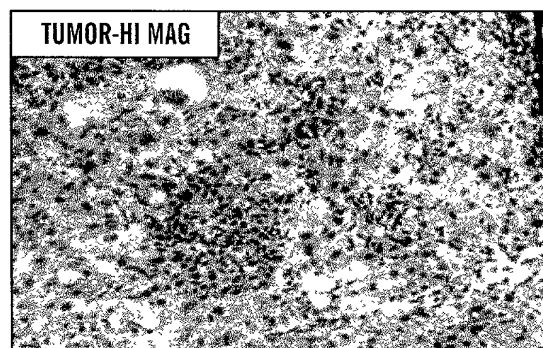


FIG. 17C

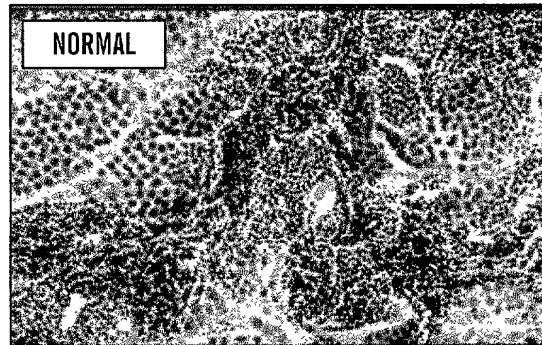


FIG. 18A

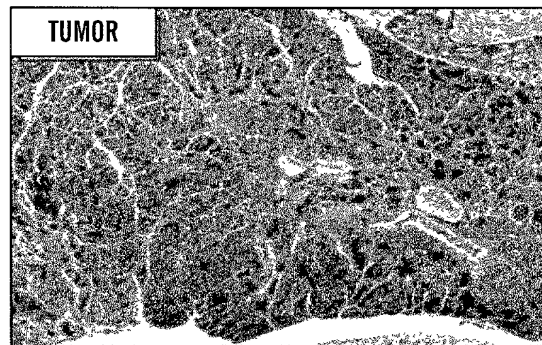


FIG. 18B

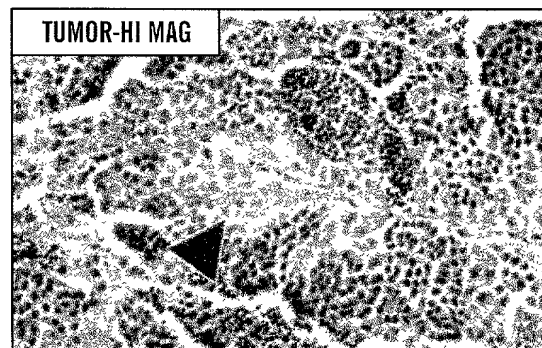


FIG. 18C

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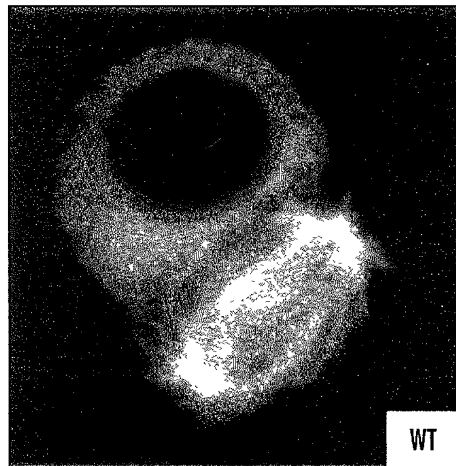


FIG. 19A

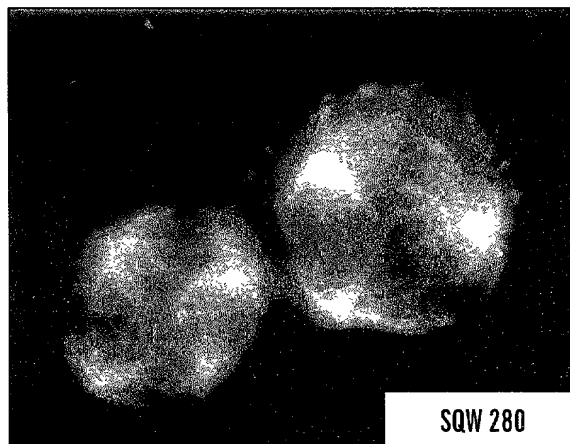


FIG. 19B

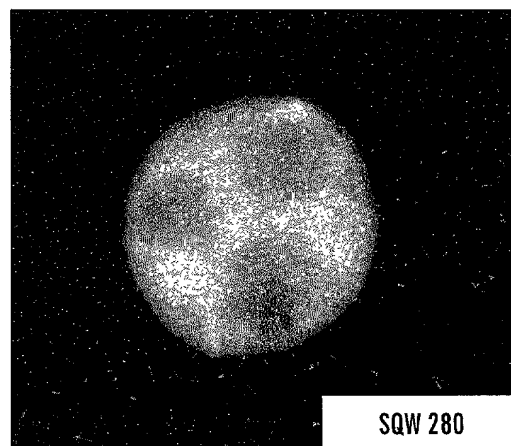


FIG. 19C

0958007.06141
FIG. 19A

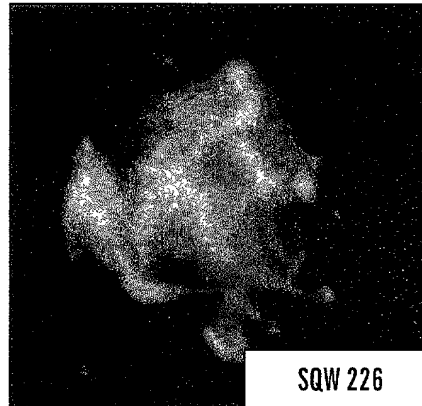


FIG. 19D

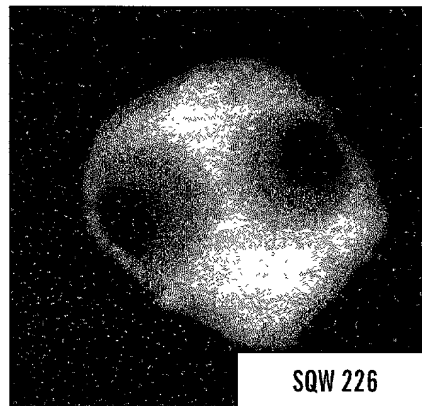


FIG. 19E

FIG. 19D

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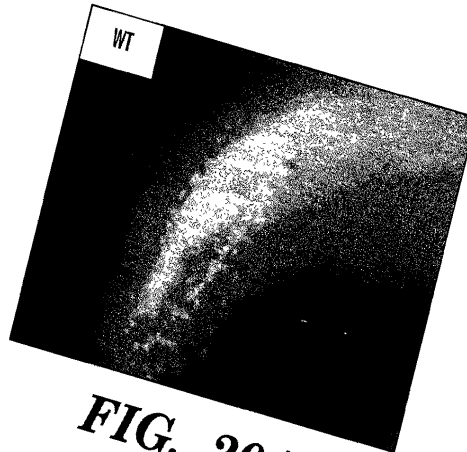


FIG. 20A



FIG. 20B

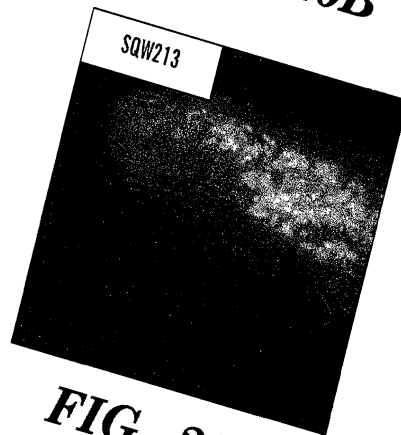


FIG. 20C

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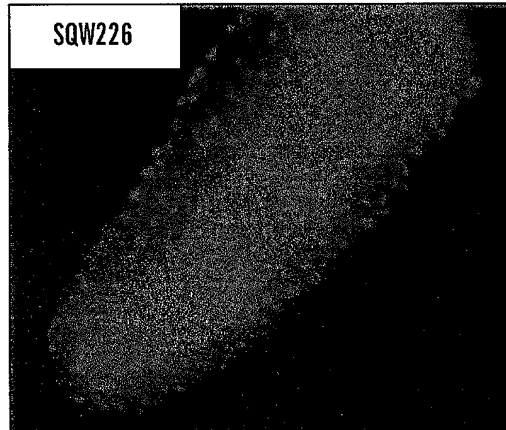


FIG. 20D

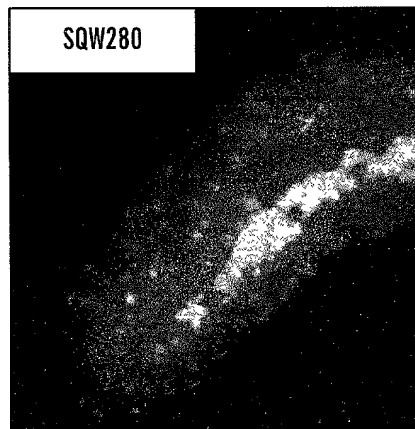


FIG. 20E

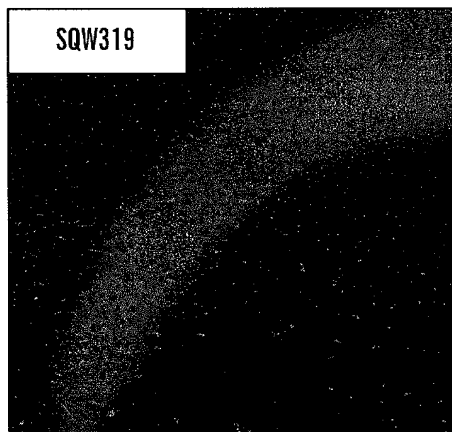


FIG. 20F

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TOT 190" 20085260

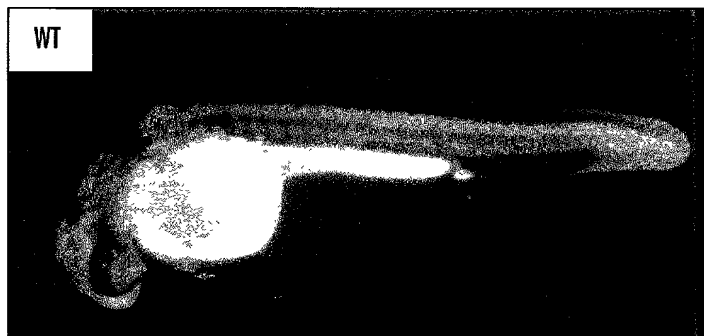


FIG. 21A



FIG. 21B

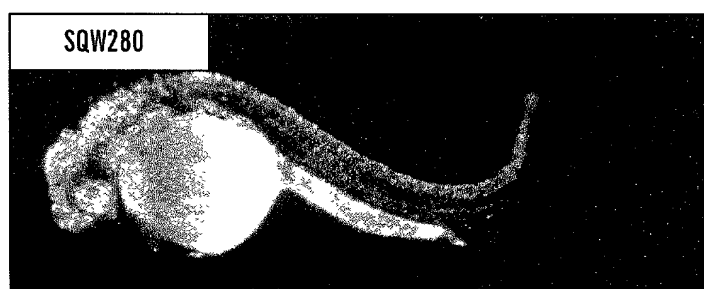


FIG. 21C

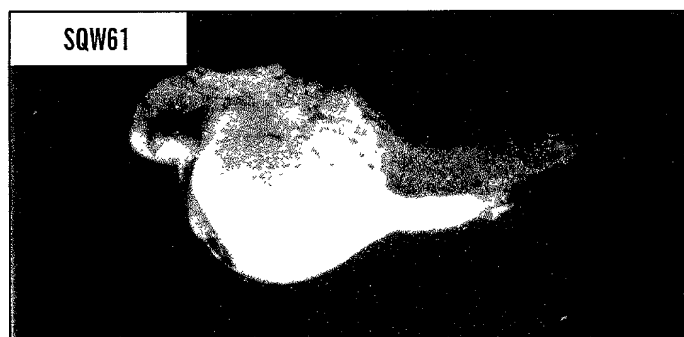


FIG. 21D

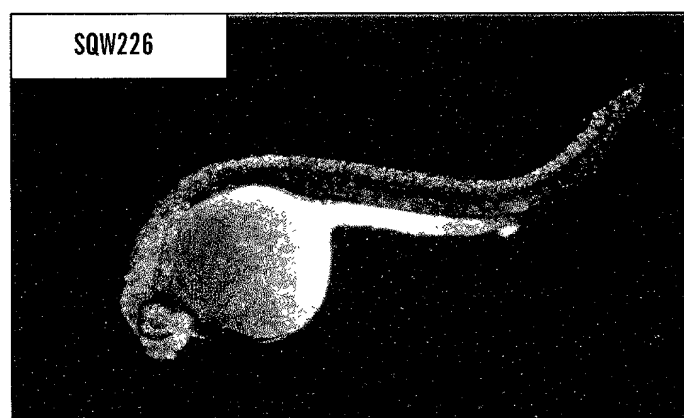


FIG. 21E

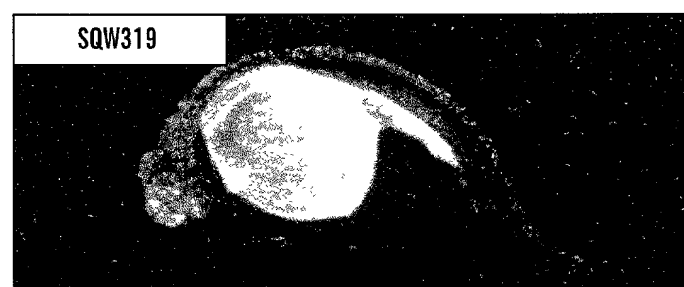


FIG. 21F